

## FL4003 Recirculating Cooler

### Recirculating Cooler/Chiller for environmentally friendly cooling

The FL series offers a new generation of chillers for routine cooling applications within the laboratory and industry. The temperature stability of the PID control is  $\pm 0.5^{\circ}\text{C}$ . All units can easily be cleaned and are provided with a splash water proof keypad with LED temperature indication. On the front of the units there is an RS232 interface as well as an alarm shutdown. The filling port is easily accessible placed on the top under a lift-up cover. Another hinged tray serves as a file for the operating manual or other documents concerning the installation. The removable venting grid allows an easy cleaning of the condenser, the drain tap is easily accessible behind the grid. All models include an easily visible level indication. Another advantage is the venting slots are on the front and rear and therefore the units can be placed directly one beside the other (space saving).



### Your advantages

- Ergonomic design and easy operation
- Splash-proof keypad with integrated mains switch
- Large, bright LED display
- Reliable Microprocessor PID temperature control
- Filling level indicator
- Powerful immersion pumps, suitable for continuous operation
- Permissible temperature in return line  $+80^{\circ}\text{C}$
- Easy filling from the top with hinged protective lid
- Low liquid level protection with optical and audible alarm signal
- Integrated stainless steel bath tanks
- Removable venting grid for cleaning of the condenser
- Front drain
- No side vents
- RS232 interface for PC-connection
- IP class according to IEC 60529: 21
- Alarm output, potential-free change-over contact (max. 30 VA)
- Pressure Indicator
- By-pass valve to adjust pump pressure

### Technical Data

Order No.	9663040					
Model series	FL Series					
Category	Recirculating Coolers					
Working temperature range ( $^{\circ}\text{C}$ )	-20 ... +40					
Temperature stability ( $^{\circ}\text{C}$ )	$\pm 0.5$					
Setting / display resolution	0.1 $^{\circ}\text{C}$					
Temperature Display	LED					
Cooling capacity (Medium Ethanol)	$^{\circ}\text{C}$	20	10	0	-10	-20
	kW	4	3.4	2.4	1.5	0.65
Pump capacity flow rate (l/min)	40					

Pump capacity flow pressure (bar)	0.5-3.0
Pump connections	G3/4"
Barbed fittings diameter (inner dia. / mm)	3/4"
Filling volume liters	24 ... 30
Refrigerant stage 1	R452A
Filling volume refrigerant stage 1 (g)	2220
Global Warming Potential for R452A	2140
Carbon dioxide equivalent stage 1 (t)	4.751
Digital interface	RS232 Optional: Profibus
Ambient temperature	5...40 °C
Dimensions W x L x H (cm)	60 x 76 x 115
Weight (kg)	123
Sound pressure level (distance 1 m) max. (dBA)	67
Included with each unit	2 barbed fittings for tubing 3/4" inner dia. (pump connections G3/4" male)
Cooling of compressor	Air
Available voltage versions	400 V / 3 Ph. / 50 Hz 230 V / 3 Ph. / 60 Hz

Suitable fluids: water, water-glycol mixture, JULABO Thermal bath fluids

Refrigerant specifications are valid for the 50 Hz version.

## Characteristics

### Display



#### Easy to read

Large LED temperature display for actual value and setpoint (resolution 0.1 °C)

### Refrigeration Technology



#### Consistent cooling capacity

Easily removable venting grid for quick and easy cleaning

### Operation



#### Simple and fast

Convenient 3-key setpoint adjustment (FL models)

### Technical Features



#### Serial connection

RS232 interface for PC connection, e.g. for data communication and recording of measured values

### Temperature Control



#### Precise

PID Temperature control with set control parameters, temperature stability  $\pm 0.02 \dots \pm 0.2$  °C